



EY's public finance management chain

A foundational blockchain solution for government and the public sector

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Why blockchain?

The significant promise of blockchain for government



How do I know if blockchain will help with my challenge?

1

Are you trying to get multiple parties to work together?

2

Do you have trust issues between the parties?

3

Is it important to get a tamper proof record of transactions between the parties?

4

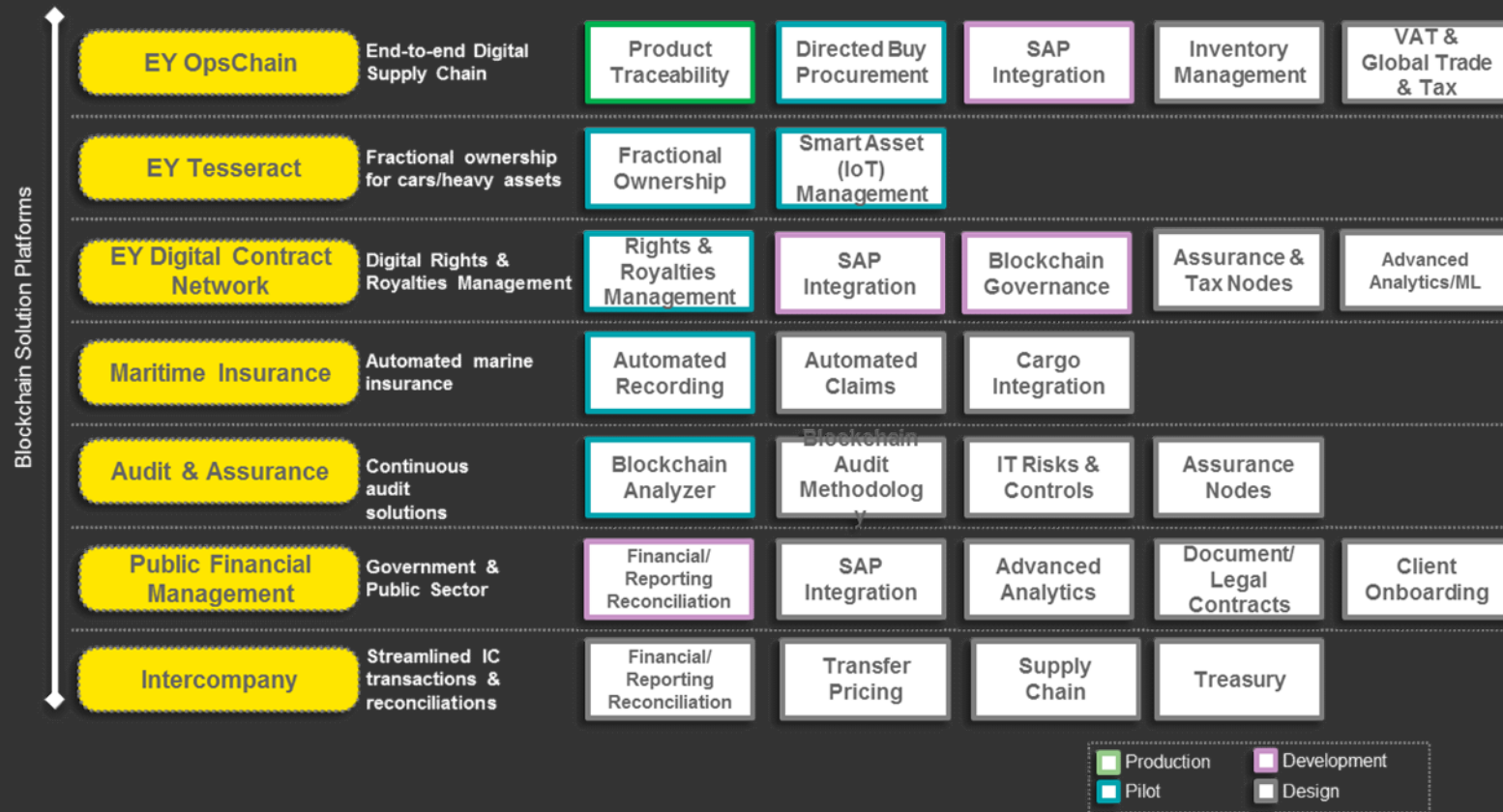
Are we moving something of finite value* around?

5

Does the group benefit from increased transparency & lower cost of information exchange?

* Could be currency, assets, data.

PFM Blockchain is one of seven (7) EY platforms



The significant promise of blockchain for government

Blockchain is best suited to situations where we have to deal with interfaces in the exchange of resources and information across organizational boundaries

1. In situations where the exchange of information is important for the discharge of individual and collective responsibility across interfaces between two or more entities
2. When the interface boundaries bridge different financial and operational systems under different control
3. When attaching non-financial objectives and conditions to revenue/expenditure/fixed assets would enhance results
4. To enable integrated reporting to the n^{th} level of use in any supply chain or user/delivery chain
5. To eliminate or greatly reduce audit-based compliance frameworks
6. Secure benefits without having to make costly, risky, major IM/IT system replacements or upgrades

Blockchain won't magically fix a broken business issue, but if your desire is to fix the broken business issue, blockchain can help enable a solution like no other technology that has come before it

A wide range of applications covering all major approaches to public management & administration

Blockchain is applicable to most if not all of the internal and external relationships of government and the public sector

Government to individuals	→	Identity management, benefits delivery, regulation, taxation, fees, voting
Government to business/NGO	→	Procurement and supply chain; public-private partnerships, grants and contributions, transfer payments, regulation, taxation, fees
Government to Government	→	Intergovernmental transfers, regulation, indirect taxation (payments in lieu), fees
Public Finance Management	→	Core foundations of public budgeting and financial accountability underpinning all government action



Better PFM, better services, better government

Foundations of better government

Enhancing public finance management (PFM) is focused on three foundational issues that very few jurisdictions have been able to address fully, presenting an opportunity for innovation and the delivery of better government and public sector outcomes

1

Transparent, accurate, continual information for financial reporting and accountability along the entire PFM chain: central budget authority, program authority, delivery agent

2

Administrative efficiency and capacity in core financial management business processes such as budgeting, expenditure management and performance management, without significant FMIS investment and risk

3

A single source of integrated financial and nonfinancial performance information provided continually to support managerial and strategic decision-making and help promote allocative efficiency and effectiveness for public outcomes

Significant opportunity for applying blockchain technology



Provide a single source of truth along the blockchain to support timely decision-making, based on integrated financial and nonfinancial data, leading to better outcomes for citizens and government



Flexibility to pull the right data at the right time allows program authorities to manage programs more effectively and budget authorities to prioritize, course-correct and calibrate overall fiscal strategies in near to real-time



All users secure significant benefits:

- ▶ Simplified and integrated business processes at lower cost
- ▶ Enhanced visibility into data
- ▶ Improved analytical ability
- ▶ Minimal human errors
- ▶ Near-real-time auditable process
- ▶ More transparency
- ▶ Multi-stream reporting (e.g., public and management accounts)



High degree of confidentiality and security through use of sophisticated cryptographic protocols inherent to the power of blockchain methods



Opportunity to code more controls in place through use of “smart contracts” at any point along the chain, including for external delivery agents and suppliers, and in situations of statutory payment obligations (e.g., individual benefit programs, demand-driven)

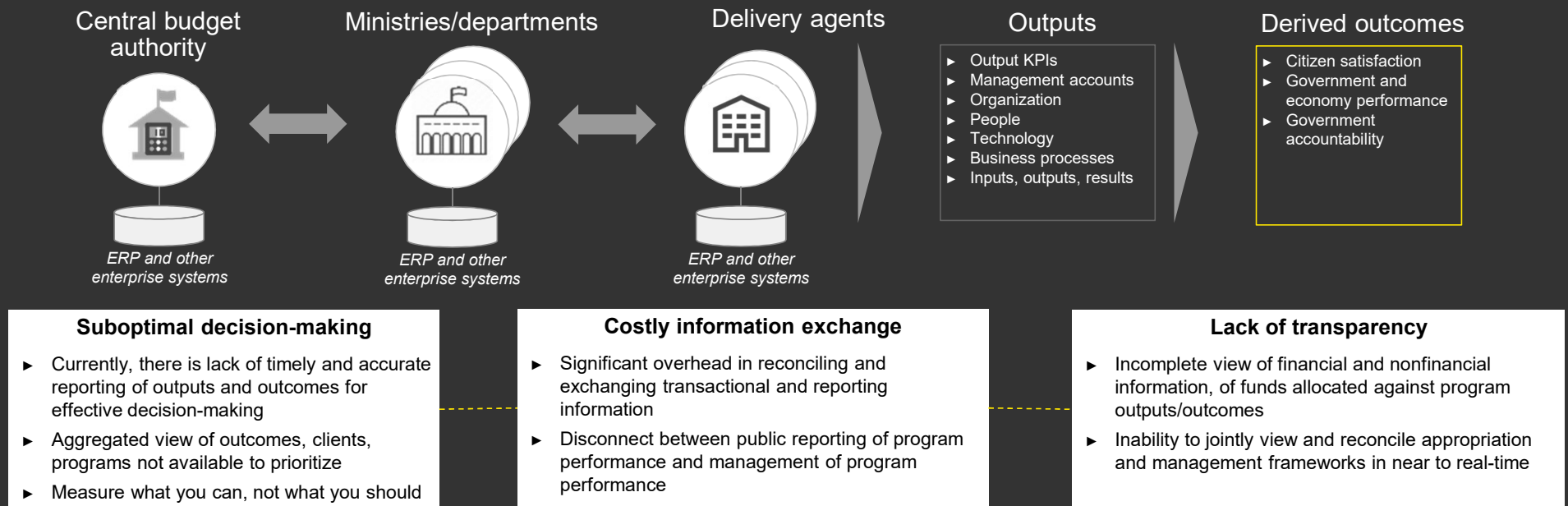


Define user accessibility to confirm the right level of visibility into decision-making data is provided, respecting formal authority and accountability



EY's PFM chain: use case

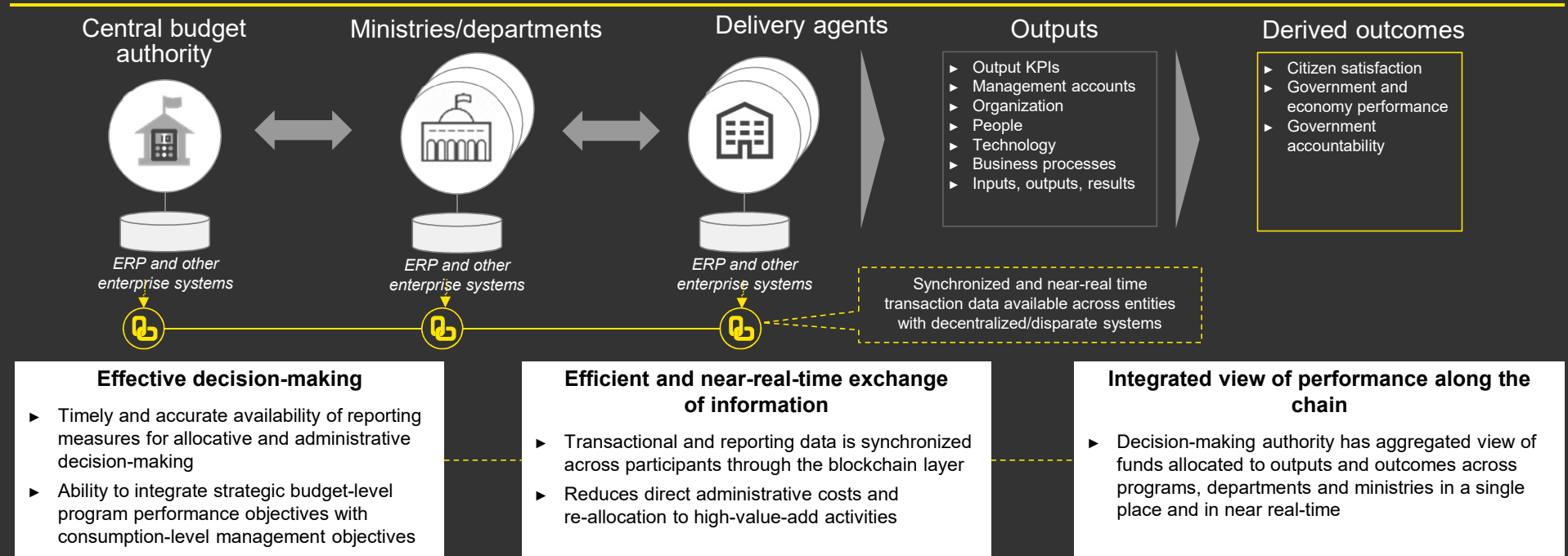
EY's PFM chain supports effective decision-making, reduces costs, and improves transparency and accountability ...



The best path forward is one that can:

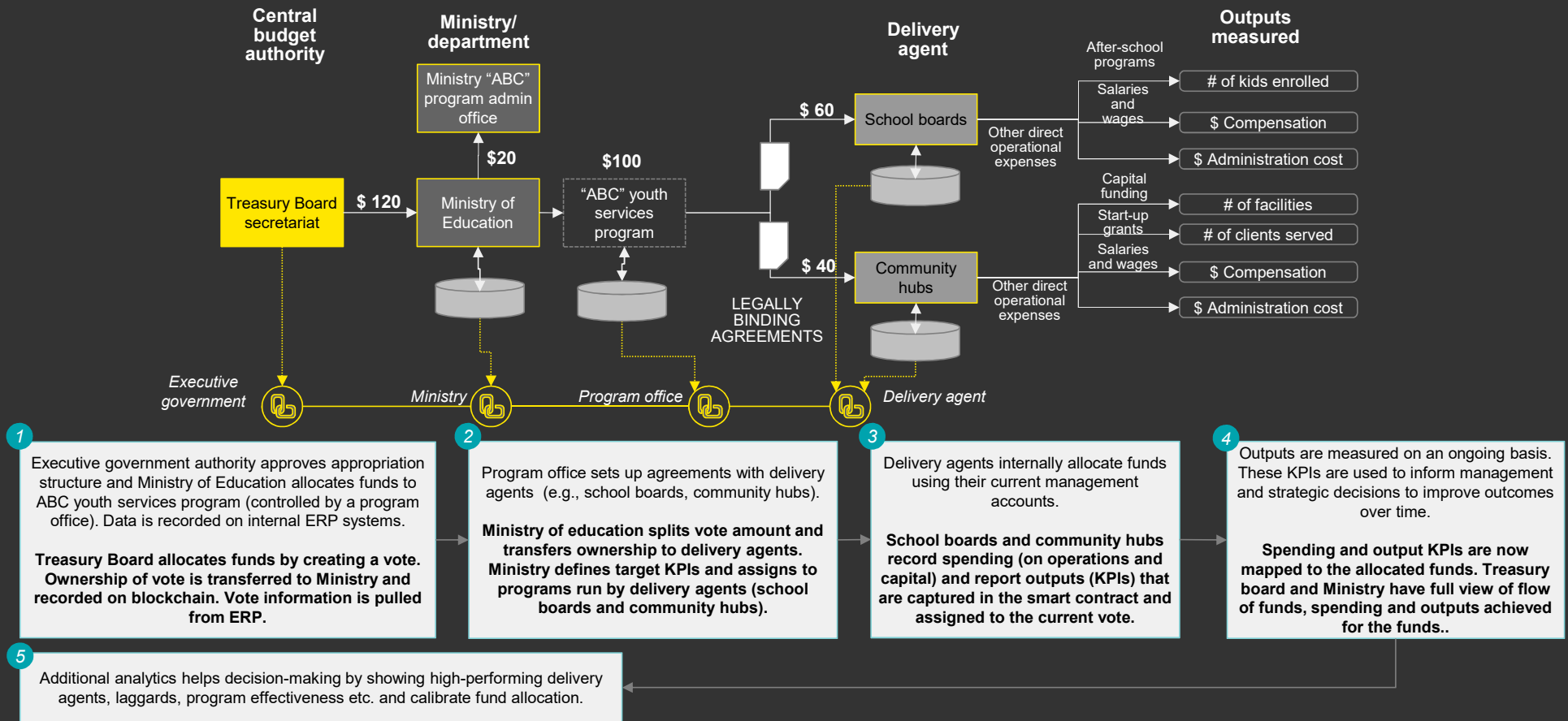
- ▶ Sustain an effective, efficient, secure, and cost-effective solution without the need for costly transformation of core FMIS
- ▶ Provide transparency via a single source of truth across the entire chain for real-time decision-making and effective allocation and prioritization of public resources
- ▶ Find a mechanism to synchronize and align disparate systems and business processes in driving transparency and accountability

... creating a single source of truth to support more effective day-to-day decisions and lead to better citizen results



- ▶ Reconciliation and consolidation at various interface nodes (e.g., between program authorities and delivery agents)
- ▶ Integration of financial and non-financial reporting information
- ▶ Improved internal controls including potential use of “smart contracts”
- ▶ Opportunity to improve PFM architecture and performance without expensive and risky FMIS transformation

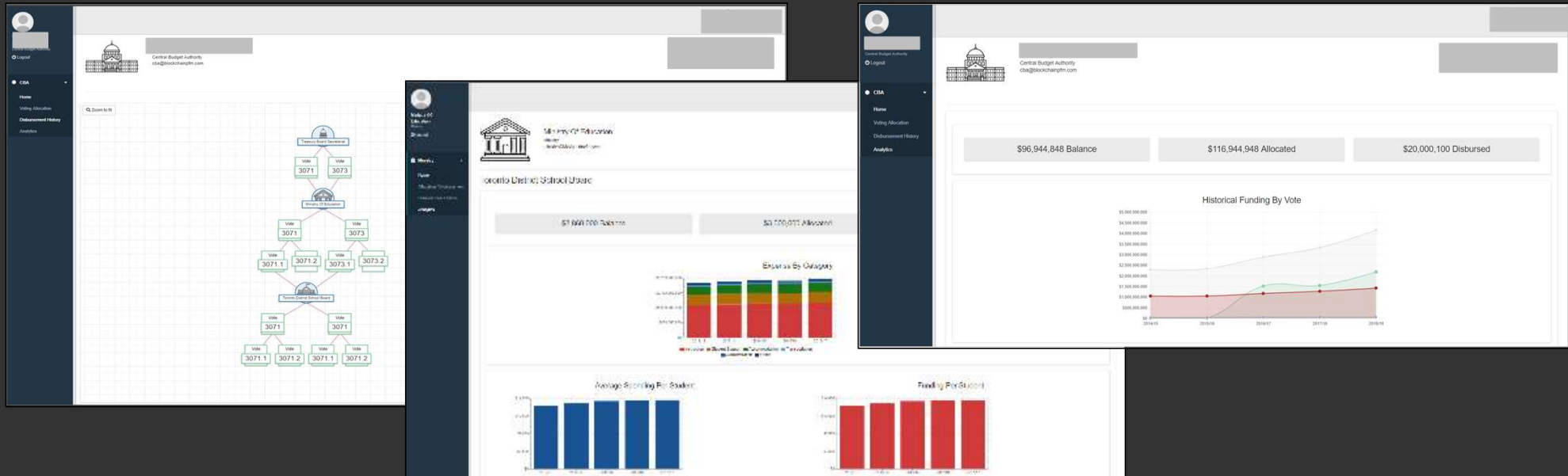
Stylized use case to demonstrate allocation, reconciliation and consolidation using blockchain in a transfer payment model





EY's PFM chain: technical architecture

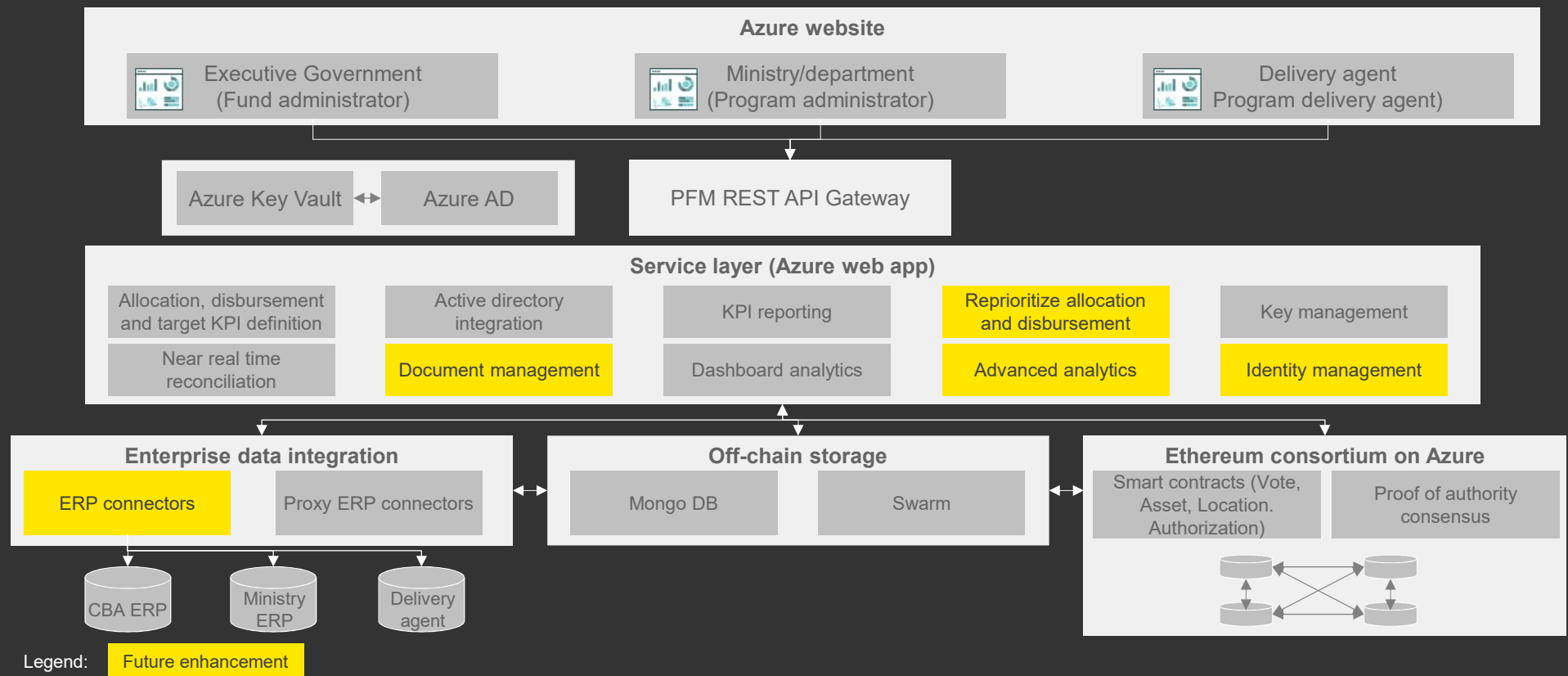
Blockchain provides an efficient and effective approach to dealing with the interface between CBA, program managers and delivery agents



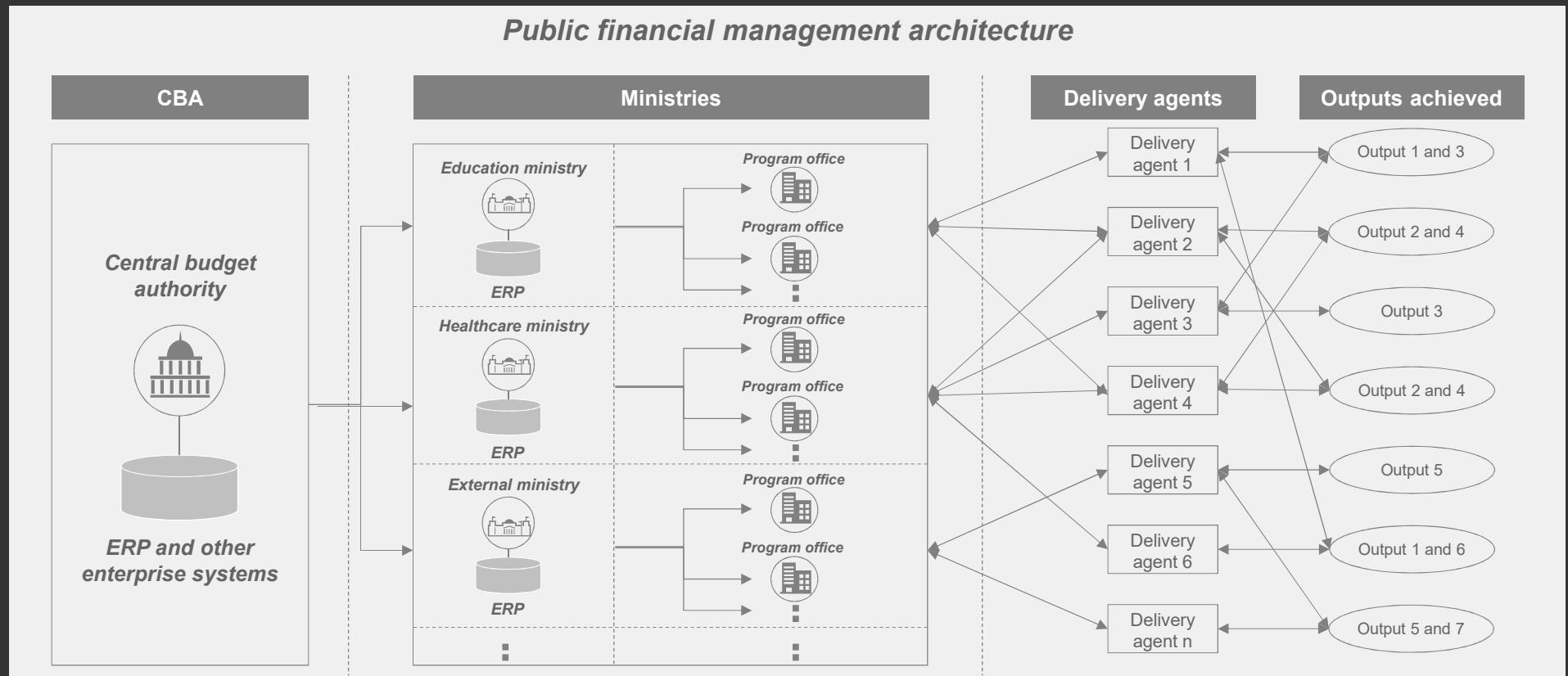
The PFM solution helps Government entities answer three key questions reliably:

- ▶ What is money spent on?
- ▶ How is money being spent?
- ▶ What outputs are delivered and outcomes achieved?

Scope of current EY proof-of-concept investment focuses on utilizing a private blockchain to produce a new information service layer for various decision-makers



The proof-of-concept consists of various one-to-one, one-to-many and many-to-one resource relationships





Questions about the future

The significant promise of blockchain for government

The world will move exceptionally quickly from concept, through proofs, to pilots, to full industrialization of blockchain; some interesting questions remain to be explored

1. How will Supreme Audit Institutions respond to a blockchain world?
2. What will global accounting standards bodies think about the power of blockchain?
3. Will governments embrace a move from private to public chains?
4. How far and how quickly will we introduce digitization of fiat currency into the equation?
5. What is the role of government as we shift from notarization to tokenization on the blockchain?
6. How disruptive will blockchain be as solutions move away from parallel audit-based systems, to ones integrated with laws and regulations?

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